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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,101	12/09/2004	Walter Klausberger	2002P08622WOUS	5332

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Siemens Corporation
Intellectual Property Department
170 Wood Avenue South
Iselin, NJ 08830

EXAMINER

RUTKOWSKI, JEFFREY M

ART UNIT	PAPER NUMBER
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2619

MAIL DATE	DELIVERY MODE
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10/25/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/518,101

Applicant(s)

KLAUSBERGER ET AL.

Examiner

Jeffrey M. Rutkowski

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/09/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claims 1-11 have been cancelled.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The abstract of the disclosure is objected to because it does not describe the applicant's invention. Correction is required. See MPEP § 608.01(b).

Claim Objections

3. **Claims 12-31** are objected to because of the following informalities: independent **claims 12 and 23** recite an access server being located downstream of an access multiplexer. The term downstream is a matter of a relative point of view. The direction of data flow to or from a particular point is what determines whether or not something is upstream or downstream. Newton's Telecom Dictionary defines upstream as going away from a particular point. Downstream is defined as a transmission traveling towards a particular point. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. **Claims 25-28** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims recite the use of a mechanism. A mechanism does not define a particular structure of the multiplexer.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. **Claims 12, 22-23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US Pg Pub 2004/0213252), hereinafter referred to as Lee, in view of Fiaschi et al. (WO 01/78310 A2), hereinafter referred to as Fiaschi, Skemer (US Pg Pub 2007/0005954) and Akgun et al. (US Pat 7,039,049), hereinafter referred to as Akgun.

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9. For **claims 12 and 23**, Lee teaches a network where a customer location **10** communicates with a Remote Authentication Dial-In User Service (RADIUS) server **80** [**figure 9**]. Point-to-Point Protocol over Ethernet (PPPoE) can be used as the communications protocol between the devices [**0038**] (using the Point-to-Point Protocol over Ethernet (PPPoE) for a data transfer between the data terminal devices and an access server which is located downstream of the access multiplexer). The RADIUS server is used to authenticate dial-in users and charge for usage time [**0065**] (checking the access authorization of the data terminal devices and establishing the access to the data network by the access server). The access multiplexer **50** used in Lee's invention supports a bridge mode when using PPPoE [**0040**] (assigning an Ethernet bridge to the access multiplexer or integrating an Ethernet bridge into the access multiplexer). Lee teaches an access multiplexer **90** communicates with a RADIUS server **80** over the Internet **3** [**figure 9**]. Lee does not teach an Ethernet network is used as the communication medium. Fiaschi teaches the Ethernet medium limitation absent from the teachings of Lee by disclosing Point-to-Point Protocol (PPP) is used over Ethernet to communicate with a PPP Switch [**figure 4**]. The PPP Switch is configured to perform admission control, classification, policy enforcement and scheduling functions [**page 8 lines 3-20**] (establishing a link from the access multiplexer to the access server and to further components located downstream of the access server using an Ethernet network). Lee does not teach an Ethernet bridge evaluates PPPoE headers. Fiaschi teaches the Ethernet bridge limitation absent from the teachings of Lee by disclosing a classifier of the PPP Switch [**figure 4**] classifies PPP frames by using a session identifier field [**page 9 lines 3-5**] (evaluating an PPPoE header contained in a received Ethernet frame by the Ethernet bridge, the Ethernet bridge equipped with a filtering mechanism for

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evaluating). Lee also does not teach the concept of an authentication gateway. Skemer teaches the authentication gateway concept absent from the teachings of Lee by disclosing an Integrated Access Device (IAD) determines whether or not access rights to a particular destination need to be authenticated before establishing a connection to the destination [0078]. The teaching of Skemer is the same concept found in the forwarding step of the present method. In both cases, a connection is not completed until authentication has occurred (forwarding the Ethernet frame to the Ethernet bridge if the PPPoE header can be assigned to an existing connection confirmed by the access server, or if the PPPoE header can be assigned to a connection which is being set up). Lee also does not teach the discarding of frames. Akgun teaches the frame discard limitation absent from the teachings of Lee by disclosing only Ethernet frames whose addresses correspond to a PPPoE session are bridged. Ethernet frames are discarded if the Ether-type field does not match a discovery or session code. In Akgun's invention, any Ethernet frame not related to a PPPoE connection is discarded [col. 11 lines 10-20] (discarding all other Ethernet frames which contain a PPPoE header; and discarding all Ethernet frames which do not contain a PPPoE header).

10. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use Fiaschi's Ethernet network in Lee's invention to avoid having to configure a Permanent Virtual Circuit (PVC) for each new user. It also would have been obvious to a person of ordinary skill in the art at the time of the invention to use Fiaschi's Ethernet switch in Lee's invention to make sure a session has correctly assigned frames. It also would have been obvious to a person of ordinary skill in the art at the time of the invention to use Skemer's IAD in Lee's invention to provide an authentication gateway. It would have been obvious to a person of

ordinary skill in the art at the time of the invention to use Akgun's filter rules in Lee's invention to protect the network environment from unauthorized attacks.

11. For **claim 22**, which depends from **claim 12**, Lee teaches the use of the Internet **3 [figure 9]** (wherein the data network is the Internet).

12. **Claims 13 and 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Fiaschi, Skemer and Akgun as applied to **claims 12 and 23 respectively** above, and further in view of Hassan-Ali et al. (US Pat 6,778,542), hereinafter referred to as Hassan-Ali.

13. For **claims 13 and 24**, which depend from **claims 12 and 23 respectively**, Lee does not teach the use of timers. Hassan-Ali teaches the timer limitation absent from the teachings of Lee by disclosing an aging timer. When the aging timer expires or times out, the Medium Access Control (MAC) address associated with the aging timer is removed from a MAC table [**col. 7 lines 40-45**] (starting a timer when the connection is being set up, wherein, when the timer times out, a media access control (MAC) address of a sending Ethernet component is removed from a routing table of the Ethernet bridge if the connection set-up is not confirmed by the access server before the timer times out).

14. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use an aging timer in Lee's invention to not have to keep assigned resources to an inactive connection.

15. **Claims 14, 16, 25-26 and 29-30** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Fiaschi, Skemer and Akgun as applied to **claims 12 and 23 respectively** above, and further in view of Masel et al. (US Pg Pub 2003/0195991), hereinafter referred to as Masel.

16. For **claims 14 and 25-26**, which depend from **claims 12 and 23 respectively**, Lee does not teach the use of Random Early Discard (RED). Masel teaches the RED limitation absent from the teachings of Lee by disclosing a High Performance Communications Processor (HPCP), capable of being used in a PPPoE environment [1144], that performs RED on a per queue basis [1109] (wherein the Ethernet frames are discarded randomly or specifically selected for the data transfer direction toward the data terminal device in a receive buffer of an Ethernet interface through which the access multiplexer is connected to the Ethernet network, on the basis of the load status of send buffers which are assigned to the digital subscriber lines).

17. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use RED on a per queue basis in Lee's invention to prevent the network from becoming congested.

18. For **claims 16, 29 and 30**, which depends from **claims 14, 25 and 26 respectively**, the teachings of Masel, from the rejection of **claim 14**, discloses a processor (control logic circuit) is performing congestion (overload condition) management via RED (wherein Ethernet frames to be assigned to the respective digital subscriber line are discarded if a send buffer overload condition on the digital subscriber line is predicted by a control logic circuit). The rejection of **claim 14** also provides the motivation to combine.

19. **Claims 15, 17, 27-28** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Fiaschi, Skemer, Hassan-Ali and Akgun as applied to **claims 13 and 24** above, and further in view of Masel.

20. For **claims 15 and 27-28**, which depends from **claims 13 and 24 respectively**, Lee does not teach the use of overload protection schemes. Masel teaches the overload protection

limitation absent from the teachings of Lee by disclosing a High Performance Communications Processor (HPCP), capable of being used in a PPPoE environment [1144], that performs RED on a per queue basis [1109] (claim 15: wherein the Ethernet frames are discarded randomly or specifically selected for the data transfer direction toward the data terminal device in a receive buffer of an Ethernet interface through which the access multiplexer is connected to the Ethernet network, on the basis of the load status of send buffers which are assigned to the digital subscriber lines; claim 27: further comprising a mechanism for overload protection for the data transfer direction toward the data terminal device; claim 28: a mechanism for monitoring a receive buffer of an Ethernet interface through which the access multiplexer is connected to the Ethernet network; a mechanism for monitoring the load status of send buffers which are assigned to the digital subscriber lines; and a mechanism for the random or specific selection and discard of Ethernet frames).

21. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use a RED overload protection scheme in Lee's invention to prevent the network from becoming congested.

22. For **claim 17**, which depends from **claim 15**, the teachings of Masel, from the rejection of **claim 14**, discloses a processor (control logic circuit) is performing congestion (overload condition) management via RED (wherein Ethernet frames to be assigned to the respective digital subscriber line are discarded if a send buffer overload condition on the digital subscriber line is predicted by a control logic circuit). The rejection of **claim 14** also provides the motivation to combine.

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23. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use a processor to perform RED in Lee's invention since the processor is responsible for the overall operations.

24. **Claims 18, 20 and 31** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Fiaschi, Skemer, Akgun and Masel as applied to **claims 14, 16 and 29** respectively above, and further in view of Voit et al. (US Pat. 6,424,657), hereinafter referred to as Voit.

25. For **claims 18, 20 and 31**, which depend from **claims 14, 16 and 29** respectively, Lee does not teach the use of congestion control algorithms. Masel teaches the congestion control algorithm absent from the teachings of Lee by disclosing the use of RED congestion control algorithm. The combination of Lee and Masel do not teach the use of Weighted RED (WRED). Voit teaches the WRED limitation absent from the teachings of Lee and Masel by disclosing WRED is a well-known industry standard [**col. 18 lines 38-41**]. Newton's Telecom Dictionary defines WRED as an improvement to RED by dropping packets on a selective basis, based on Internet Protocol (IP) Precedence markings in the Transmission Control Protocol (TCP) packet header (wherein connection control frames which can be recognized on the basis of their Ethernet header are not discarded).

26. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use WRED in Lee's invention since WRED is a well-known congestion control algorithm.

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27. **Claims 19 and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Fiaschi, Skemer, Hassan-Ali, Akgun and Masel as applied to **claims 15 and 17 respectively** above, and further in view of Voit.

28. For **claims 19 and 21**, which depend from **claims 15 and 17 respectively**, Lee does not teach the use of congestion control algorithms. Masel teaches the congestion control algorithm absent from the teachings of Lee by disclosing the use of RED congestion control algorithm. The combination of Lee and Masel do not teach the use of Weighted RED (WRED). Voit teaches the WRED limitation absent from the teachings of Lee and Masel by disclosing WRED is a well-known industry standard [col. 18 lines 38-41]. Newton's Telecom Dictionary defines WRED as an improvement to RED by dropping packets on a selective basis, based on Internet Protocol (IP) Precedence markings in the Transmission Control Protocol (TCP) packet header (wherein connection control frames which can be recognized on the basis of their Ethernet header are not discarded).

29. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use WRED in Lee's invention since WRED is a well-known congestion control algorithm.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey M. Rutkowski whose telephone number is (571) 270-1215. The examiner can normally be reached on Monday - Friday 7:30-5:00 PM EST.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jeffrey M Rutkowski
Patent Examiner
10/17/2007

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